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ABSTRACT

Two needs were addressed in this project: (1) the effective utilization of V-TECS (Vocational Technical Education Consortium of States) catalogs of performance objectives, and (2) development of a system to assess curriculum needs. Three instructional areas were chosen for development from combined V-TECS catalogs and other materials after review and testing. The areas were Graphic Arts, Small Engine Repair, and Nurse's Aide. The resulting materials offered sequential, flexible instruction in a program to teach job competencies as reported by workers in these jobs. For assessment purposes, project staff developed, field tested, and revised a survey which became the working document, "A Matrix Approach to Assessing Curriculum Needs." Focussing on two sub-clusters in agriculture (horticulture and production agriculture), the survey tried to document particular tasks and relate these to particular job titles sufficient to permit compilation of a job matrix. This can then furnish the educator with a "job road map" on which to base curriculum development decisions. (CP)

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ED179712

Final Report

DEVELOPMENT OF A SYSTEM TO ASSESS CURRICULUM NEEDS IN THE OCCUPATIONAL CLUSTER OF AGRICULTURE

by

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Laura C. Steimel
Project Director

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August, 1979
Kentucky Department of Education
Bureau of Vocational Education
Frankfort, Kentucky
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ABSTRACT

Title of Project: Development of a System to Assess Curriculum Needs in the Occupational Cluster of Agriculture

Project Director: Laura C. Steimel

Project Duration: September 1, 1978 to August 31, 1979

Objectives:

(1) To acquire, review, disseminate and assess at least four V-TECS catalogs of performance objectives for utilization in Kentucky vocational programs.

(2) To identify and verify specific and related job titles in Agribusiness, utilizing incumbent workers and other individuals with technical expertise.

Procedures:

(1) V-TECS Catalogs of performance objectives were reviewed and sequenced into a learning order by teachers and other staff. Inservice training activities related to catalog utilization were conducted with teachers and corresponding instructional materials identified.

(2) An advisory committee of business, industry and education personnel in Agribusiness developed a tentative matrix of job titles, which was verified with workers and others with technical expertise. A systematic plan for assessing curriculum needs, that may be used in all program areas, was developed and disseminated.

Contribution to Education: The project provides a procedure for systematically assessing curriculum needs, so that priorities can be established for curriculum development. In addition, the project provides various methods for utilizing V-TECS catalogs.

Products Developed: A Matrix Approach to Assessing Curriculum Needs: Horticultural Production survey instrument and results; Agricultural Production survey instrument and results; matrix of Agribusiness Cluster; Guidelines for utilizing V-TECS Catalogs.

INTRODUCTION

As a part of its commitment to implement competency-based vocational education, the state of Kentucky has been a long-standing member of the Vocational Technical Education Consortium of States (V-TECS). In addition to its participation in V-TECS, Kentucky has also concentrated on the development and implementation of competency-based instructional materials, using the V-TECS Catalogs of Performance Objectives as a base. In the past vocational program areas desiring competency-based instructional materials reviewed the list of available V-TECS Catalogs and submitted a request for the development of curriculum packages. Decisions about curriculum development were then made based on a variety of factors, such as availability of catalogs, availability of appropriate personnel, required development time, cost factors, perceived need, etc.

As time went on, two questions arose:

1. How can we more effectively utilize the V-TECS Catalogs?

2. How can we design a systematic method of assessing curriculum development needs?

This project attempts to answer those two important questions.

Other educational agencies have made efforts to solve these problems. In particular, Dr. Bill R. West of the Indiana State Board of Vocational and Technical Education, was instrumental in the initial formation of the matrix approach to assessing curriculum needs discussed later in the Report. However, because of Kentucky's relatively unique approach to state-wide development and implementation of competency-based instructional materials, an appropriate and practical process needed to be developed.

This project addresses both of these urgent needs: the effective utilization of V-TECS Catalogs and the development of a system to assess curriculum needs. Although related, these two issues involved very different procedures and vocational program areas. For this reason, the two objectives will be treated separately in this report.

OBJECTIVE I

Activities & Accomplishments

I. Problem Under Consideration

In the past the Kentucky Bureau for Vocational Education had utilized V-TECS Catalogs almost exclusively for the development of individualized modules. While this costly and time-consuming effort has proved valuable in many vocational programs, it became clear that the time and expense involved could not be justified in programs with relatively low total enrollment. As a result, a plan had to be developed to utilize V-TECS Catalogs in additional ways, specifically by training teachers to use the catalogs and by identifying existing instructional materials to teach the competencies.

To do this, three instructional programs were selected for participation: Graphic Arts, Small Engine Repair, and Nurse Aide. Their selection was based on their meeting most of the following criteria:

1. The programs had been identified as priority areas for curriculum development.

2. Too few programs exist in the state to justify module development.

3. High quality materials were already available.

4. Teachers had expressed interest in working on these project.

II. Methods

In all three cases, the procedure followed was essentially the same:

a. Conduct preliminary investigation of instructional materials already developed and do a cost comparison between these and projected module development costs.

b. Obtain catalogs and sequence tasks in a logical learning sequence.

c. Identify teachers willing to help adapt or field test materials.

d. Obtain instructional materials developed by other sources and review for completeness and compatibility with V-TECS objectives. (See Appendix A)

e. Compile master list of objectives and corresponding material. (See Appendix B)

f. Conduct workshops for teachers to discuss use of catalog, adequacy of the instructional materials, setting up a resource center and management system. (See Appendix C)

g. Teachers made any necessary additions, revisions, etc. in prepared materials.

h. Teachers field test materials and keep notes for revision (including student and teacher reactions, as well as notes for improving the program). (See Appendix D)

i. Develop teacher's guide or supplemental material, where needed.

III. Results

Although the same basic procedure was followed in the three instructional areas, the efforts led to different results.

A. Graphic Arts.

This program was selected for this project primarily because of the availability of an excellent, competency-based curriculum package for Graphic Arts, the PICA system.

Developed at Clemson University for the Printing Industries of the Carolinas (PICA), this package not only met the V-TECS objectives, but exceeded them in completeness. The seven instructors who studied and field-tested it, highly recommended it for use in all Kentucky Graphic Arts programs. After a week-long inservice workshop on the use of PICA, the package was adopted and implemented in 16 programs across the state.

B. Small Engine Repair

In this area, instructional materials developed by the Mid-America Vocational Curriculum Consortuim (MAVCC), as well as a slide series produced by the American Association for Vocational Instructional Materials (AAVIM) were identified as good resources. However, the six instructors who worked with these resources concluded that the material needed to be organized into self-contained modules in order to be utilized and managed effectively. As a result, their task was to sequence the V-TECS objectives, coordinate the MAVCC and AAVIM material with the objectives and then write the additional material needed to complete the individualized instructional package. A sample is contained in Appendix E.

C. Nurse Aide

These seven instructors reviewed Nurse Aid materials developed by other sources, but were not in complete agreement as to their value. Their solution was to review the Kentucky modules developed for Licensed Practical Nurse programs and identify which modules coincided with tasks in the Nurse Aide catalog. They are currently field-testing the LPN modules with Nurse Aide students to determine the applicability of the modules on that level and make recommendation for articulation between those two programs. (See Appendix F)

IV. Conclusions

The overall goal of utilizing the V-TECS Catalog to develop a competency-based curriculum has been achieved. The basic procedure can be employed in any program area. Beyond that, the utilization of prepared instructional materials to teach the V-TECS objectives can take three forms or some combination thereof, as illustrated by the three previous examples.

At the present time, a fourth area for catalog utilization has not been selected, although several areas are under consideration.

V. Recommendations

The value of utilizing V-TECS Catalogs in this way is two-fold:

1. Using the thoroughly researched V-TECS Catalog as the basis for curriculum development or selection insures that a program teaches the competencies of the occupation as reported by workers.

2. Flexibility is assured since instructional materials can be acquired either through development or from other sources.

Since it is a goal of the Kentucky Bureau of Vocational Education to make competency-based programs available in all vocational areas, utilizing V-TECS Catalogs effectively is a crucial factor. Kentucky has made great strides in its effort to develop competency based curriculum, but time and funds prohibit doing this for every vocational program. Furthermore, it would seem unwise to duplicate the efforts of others who have already produced high quality competency-based materials.

For these reasons, it appears valuable to utilize all possible sources for instructional materials, while always adhering to the research-based information in the V-TECS Catalog.

With the possibilities for obtaining instructional materials considerably broadened, one wonders on which program to concentrate and give priority. These questions will be addressed in the second section of this report.

OBJECTIVE 2

Major Activities & Accomplishments

I. Problem Under Consideration

As explained previously in this Report, it became necessary to devise a practical method for setting curriculum development priorities which could be used in any occupational area. While a basic procedure was outlined in the proposal of this project, an attempt was made to let the process evolve as need dictated. Although the cluster chosen for use in the project was Agribusiness, the uniqueness of this or any program area, will make it necessary to adapt the procedure accordingly.

II. Methods

Over a period of one year, the following steps were taken to achieve the objective:

1. Project Director met with Indiana V-TECS Coordinator, Dr. Bill West, to learn of the progress made there in a similar project.

2. Project Director developed a tentative procedure (a revised version of the Indiana model).

3. Project Director met with Agribusiness Education Unit in the Bureau of Vocational Education to elicit their comments on the proposed procedure, which they approved.

4. With the help of the Agribusiness Education Unit, teachers were identified to serve on a Working Committee.

5. Project Director developed tentative survey instrument for Horticulture Sub-Cluster.

6. Project Director met with Working Committee, composed of one curriculum specialist, one teacher-educator and three Agribusiness teachers. The group discussed the tentative matrix and Horticulture survey form and made suggestions for survey procedures and possible respondents. (See Appendix G)

7. Project Director revised matrix and Horticulture survey form, based on Committee's suggestions. (See Appendix H)

8. Working Committee met again to finalize matrix and survey form. Procedure for sending surveys was determined and names for Advisory Committee submitted.

9. Advisory and Working Committees met and made several suggestions on the matrix and survey, as well as providing numerous sources for survey respondents. (See Appendix I)

10. Using Department of Commerce information and telephone directories Project Director identified 139 Horticulture sites as survey respondents. An attempt was made to: (1) distribute them over the various sub-areas of Horticulture; (2) spread them geographically across the state; (3) select both large and small businesses.

11. An Advisory Committee member "field tested' the Horticulture survey form with his own workers; no specific changes in the form were suggested.

12. Project Director devised the survey form for Agricultural Production using the same format as for Horticulture. This was sent to Committee members for suggestions and revised accordingly. (See Appendix J)

13. Project Director met with members of Agribusiness Education Unit to identify teachers to distribute the survey. Again, an attempt was made to spread them geographically across the state, although the Agriculture teachers themselves identified the actual respondents.

14. Project Director analyzed responses from both surveys and compiled the results.

15. Project Director compiled Manpower Statistics and Outlook related to Agribusiness for use in setting curriculum developement priorities.

16. Project Director organized procedures and recommendations into a working document, "A Matrix Approach to Assessing Curriculum Needs."

III. Results

The results of these efforts fall into 2 categories: (1) that which applies to Agribusiness only, which was the "test case" of this project; and (2) that which applies to any program area, namely the matrix procedure.

A. Agribusiness Results

1. Horticulture. 25 job titles were reported in 8 different categories. Although returns were spread out over the state, only 15 out of 139 sites responded for a return of 11%. (33 actual forms were returned)

Clearly, the low percentage of return throws the findings into question. For example, were the 19 unreported job titles omitted because they were too specialized or because the survey was too spotty and poorly received?

What the survey does show are those job titles with common duty areas. If duties are similar within specific job titles, this information can be useful in educational planning.

Horticulture Returns

By Geographical Area	No. of Forms Returned	No. of Sites Responding
Lexington	5	3
Madisonville	3	1
Stamping Ground	6	1
Bowling Green	4	2
Bagdad	1	1
Monticello	2	1
Louisville	4	2
Jeffersontown	6	2
Owensboro	1	1
Richmond	1	1
	33	15

(out of 139)
11% return

By Categories	
Arboriculture	1
Floriculture	9
Greenshouse	7
Landscape	1½
Nursery	6½
Turf	4
Fruits	1½
Vegetables	2½
	33

Horticulture Job Titles not Reported

Arboriculture:	Groundman
	Trainee
	Climber
	Foreman
Landscape:	Grounds Supervisor
	Grounds Worker
	Landscape Aide
Turf:	Maintenance Worker - Parks
	Worker - Foreman - Parks & Recreation
	Golf Course Mechanic
	Golf Course Pest Control Specialist
	Golf Course Irrigation Specialist
Fruits:	Fruit Farm Manager
	Vine Grower
	Vineyard Manager
	Tree Fruit Farmer
Vegetables:	Vegetable Farmer
	Vegetable Farm Manager
	Specialty Crop Farmer

Were these titles not reported because:

(1) they are too specialized?
(2) survey returns were low?
(3) other?

Job Titles Reported in Each Category (with D.O.T.)

Category	Job Titles	No. Reported	D.O.T.
Arboriculture	Owner/Manager	1	408.131-010
	Foreman	1	408.131-010
Floriculture	Floral Delivery Person	2.25	299.477-010
	Floral Sales Person	1.75	260.357-026
	Floral Designer	1	142.081-010
	Floral Shop Manager	3	185.167-046
	Wholesale Florist Manager	1	185.167-070
Greenhouse	Greenhouse Foreman	2	405.131-010
	Greenhouse Worker	3	405.684-014
	Owner/Manager	1	405.131-010
	Salesperson	1	272.357-022
Landscape	Landscape Planter (Crew Foreman)	.25	408.161-010
	Retail Landscape & Garden Store Salesperson	.25	272.357-022
	Landscape Designer	1	001.061-018
Nursery	Nursery Worker	4	405.678-014
	Plant Propagator	.75	405.361-010
	Nursery Mechanic	.25	624.281-010
	Nursery Salesperson	.50	272.357-022
	Part Owner	1	180.167-042
Turf	Golf Course Maintenance Worker	2	406.683-010
	Golf Course Maintenance Foreman (Superintendent)	2	406.137-010
Fruits	Berry Grower	1	403.131-014
	Wholesale Produce Manager	.50	403.131-010
Vegetables	Wholesale Produce Manager	.50	402.131-010
	Vegetable Co-op Manager	1	402.131-010
	25 job titles reported		

Horticulture Sub-Cluster

(Refer to attached survey form for list of duties and tasks)

Category	Job Titles	Task	Category Core	Sub-Cluster Core
Landscape & Nursery	Landscape Planter Landscape Designer Landscape/Nursery Salesperson Nursery Worker Nursery Mechanic Plant Propagator Nursery Owner	See separate list	14 a,d,e,f,g,h 11 a,b,c,d,e 15 a,b,c,d,e,f,g 13 d,e,g	duties 1-10
Vegetables	Vegetable Farmer Vegetable Farm Manager Wholesale Vegetable Farm Manager	See separate list	18 a,g,h (also 18 b,c,d,e,f)	duties 1-10
Fruits	Berry Grower Wholesale Fruit Farm Manager Tree Fruit Farmer Fruit Farm Manager	See separate list	17 i,j (also 17 a,b,c,d,e,f,g,h)	duties 1-10
Turf	Golf Course Maintenance Worker Golf Course Maintenance Foreman Parks & Recreation Worker	See separate list	11 a,b,c,d,e 14 a,b,c,d,e,f,g,h 16 a,b,c,d,e,f,g,h	duties 1-10
Greenhouse	Greenhouse Manager Greenhouse Foreman Greenhouse Worker Greenhouse Salesperson	See separate list	13 a,b,c,d,e,f,g 11 b,d 12 a,b,c,d	duties 1-10
Floriculture	Floral Shop Manager Wholesale Florist Manager Floral Designer Floral Salesperson Floral Delivery Person	See separate list	12 a,b,c,d,e,f,g 13 a	duties 1-10

Duty Area 11 - Common to: Landscape/Nursery, Turf, Greenhouse
Duty Area 12 - Common to: Floriculture, Greenhouse
Duty Area 13 - Common to: Landscape/Nursery, Greenhouse, Floriculture
Duty Area 14 - Common to: Landscape/Nursery, Turf
Duty Area 15 - Common to: Landscape/Nursery
Duty Area 16 - Common to: Turf
Duty Area 17 - Common to: Fruit
Duty Area 18 - Common to: Vegetables

2. Production Agriculture. 23 job titles were reported in 12 categories with a return of 25%. It should be noted, however, that it is the exception for a farmer or farmworker to possess only 1 job title. The "Profiles" sheet gives a more realistic view of the survey findings, since most respondents checked between 2 and 10 job titles.

   Respondents seemed to fall roughly into 2 groups: farmers (including owners, managers, self-employed) and farmworkers, with the farmers having managerial duties. A farmer engaged in raising more than 2 types of crops or livestock was recorded as "General Farm Manager". Farmworkers who work with more than one type of crop or livestock were recorded as "Livestock Farmworker" or "Field Crop Farmworker".

   Consequently, the survey shows that the farmer in Kentucky today is a kind of "Renaissance Man of Agriculture," being involved in the raising of several types of crop or livestock, keeping records, maintaining equipment, preventing disease, marketing crops, etc.

Agricultural Production Returns

Per Cent of Returns

Three survey forms were sent to 89 Agriculture teachers across the state for distribution to local farmers.

267 - possible return
68 - actual return
25% - overall return
(also 6 incomplete or nonapplicable forms were returned)

Geographical Locations of Returns

1. Paducah
2. Barlow
3. Gracey
4. Wickliffe
5. Wanerly
6. Sebree
7. Slaughters
8. Cerulean
9. Webster Co.
10. Hopkinsville
11. Ballard Co.
12. Hardin Co.
13. Somerset
14. Bowling Green
15. Franklin
16. Winchester
17. Stanton
18. Louisa
19. Mt. Sterling
20. London
21. Barbourville
22. Laurel Co.

Average Years of Experienced Reported

Farmworkers - 4½ years
Farm Managers - 18 years

Job Titles Reported in Each Category

Category	Job Title	D.O.T.
Beef	Beef Cattle Foreman	410.131-022
	Beef Cattle Farmhand	410.664-010
	Beef-Tobacco Farmer*	
Dairy	Dairy Farm Manager	180.167-026
	Dairy Farmworker	410.684-010
Horse	Horse Farm Manager	410.161-018
	Horse Farmworker	410.664-010
Sheep	Sheep Farmer	410.161-018
Swine	Swine Farmer	410.161-018
	Swine Farmworker	410.664-010
Tobacco	Tobacco Producer	404.161-010
	Tobacco Farmworker	404.663-010
	Beef-Tobacco Farmer*	
Pasture	Pasture Producer	404.161-010
Corn	Corn Producer	401.161-010
	Corn Farmworker	401.683-010
Soybean	Soybean Producer	401.161-010
	Soybean Farmworker	401.683-010
Small Grain	Small Grain Producer	401.161-010
Hay	Hay Producer	404.161-010
General	Farm Manager, General	180.167-018
	Owner/Operator	
	Farmworker, Livestock	410.664-010
	Farmworker, Field Crops	404.663-010

NOTE: All titles are reported here. However, if the farmer was engaged in raising more than 2 items (crop or livestock) he was recorded as "Farm Manager, General." "Farmworker" was recorded for those having little or no managerial duties. Farmworkers who work with more than one type of crop or livestock were recorded as "Farmworker, Livestock" or "Farmworker, Field Crops" rather than in the specific category.

Job Titles Not Reported

Beef:
- Artificial Inseminator
- Veterinary Assistant
- Feed Lot Foreman*
- Cattle Buyer*
- Feed Lot Laborer*

Poultry:
- Chicken Farmer
- Turkey Farmer
- Poultry Farmworker
- Egg Producer
- Chicken Vaccinator

Sheep:
- Sheep Farm Hand
- Lamb Feeder
- Feed Lot Foreman
- Feed Lot Laborer
- Sheep Shearer

Pasture:
- Pasture Farmworker

Small Grain:
- Small Grain Farmworker

Hay:
- Hay Farmworker

Specialty Crop:
- Specialty Crop Worker
- Specialty Crop Producer

* These duties were reported, but not as a special job title.

47 General Farm Managers

(activities they perform and % of time spend performing them)

Duty Area	No. of respondents in category (out of possible 47)	Per Cent of Time Spent				
		0 - 10	11 - 25	26 - 50	51 - 75	76 - 100
1. Managerial	45	9	18	17	1	
2. Corn	39	18	20	1		
3. Tobacco	36	14	11	11		
4. Hay	34	25	8	1		
5. Beef	33	14	17	2		
6. Pasture	31	27	4			
7. Swine	20	7	8	5		
8. Soybean	19	6	11	1	1	
9. Small Grain	15	14	1			
10. Dairy	5	1	1	3		
11. Horse	3	2	1			
12. Sheep	1		1			
13. Poultry	0					
14. Specialty Crop	0					

Agricultural Production Sub-Cluster

Category	Job Titles	Tasks	Category Core	Sub-Cluster Core
Beef	Beef Cattle Foreman* Beef Cattle Farmhand	See separate list	beef producing duties	*managerial
Dairy	Dairy Farm Manager* Dairy Farm Worker	See separate list	dairy producing duties	*managerial
Horse	Horse Farm Manager* Horse Farm Worker	See separate list	horse producing duties	*managerial
Sheep	Sheep Farmer*	See separate list	sheep producing duties	*managerial
Swine	Swine Farmer* Swine Farmworker	See separate list	swine producing duties	*managerial
Tobacco	Tobacco Farmer* Tobacco Farmworker	See separate list	tobacco producing duties	*managerial
Pasture	Pasture Producer*	See separate list	pasture producing duties	*managerial
Corn	Corn Producer* Corn Farmworker	See separate list	corn producing duties	*managerial
Soybean	Soybean Producer* Soybean Farmworker	See separate list	soybean producing duties	*managerial
Small Grain	Small Grain Farmer*	See separate list	small grain producing duties	*managerial
Hay	Hay Producer*	See separate list	hay producing duties	*managerial
General	Farm Manager General* Owner/Operator* Farmworker, Field Crops	See separate list	may be involved in all areas (see attached profile)	*managerial

Profiles

Field Crops Farmworker: The "typical" Field Crops Farmworker generally is involved in the production of 3 or 4 crops, and may very likely also be a Livestock Farmworker. His/her duties generally include:

- growing the crop
- harvesting the crop
- storing the crop
- knowing planting methods and practices
- managing and applying fertilizer
- controlling pests and diseases

He/she may also work on machinery or keep records. He/she is generally not involved in the selection of seeds nor marketing the crop.

Livestock Farmworker: The "typical" Livestock Farmworker also doubles as a Field Crop Farmworker. He/she usually works with 1 - 3 types of animals and is responsible for:

- caring and feeding of animals
- controlling disease
- maintaining equipment or facilities

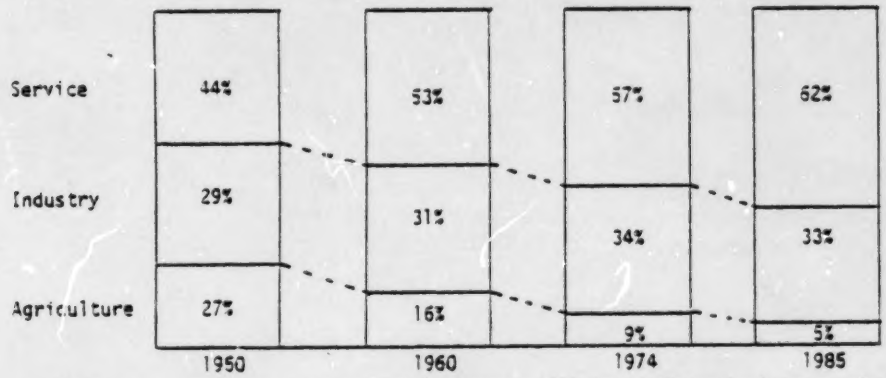
He/she may also keep records and market the livestock.

General Farm Manager: The "typical" General Farm Manager is involved in the producation of 3 - 5 crops or livestock or a combination of both. Typically, 1 or 2 items are most time consuming, such as Beef and Tobacco or Corn and Swine, and the others involve lesser amounts of time. He/she generally spends 20 - 25% of work time on managerial duties, particularly marketing the crop or livestock.

3. Manpower Statistics and Outlook

Employment levels for Farmers and Farmworkers is expected to decrease from 100,000 in 1974 to 68,000 in 1985.

Chart A. Relative Employment in the Kentucky Economy by Economic Sector*



* Data are provided for three broad sectors: (1) Agriculture includes agriculture, forestry, and fisheries. (2) Industry is comprised of mining, construction, and manufacturing. (3) Service includes transportation, communications, public utilities, trade, finance, miscellaneous services and public administration.

- from Kentucky Occupational Outlook: 1974-1985, Department for Human Resources, Bureau for Manpower Services, Frankfort, Ky., 1977.

However, this chart does not take into consideration the relative increase and decrease in various occupations within Agribusiness. As the chart below illustrates, certain areas of Agribusiness will require more emphasis in the future and vice versa.

Program	Annual Ave. Demand for Workers	1978 Actual Output	Total 5 Yr. Needs, 78-82	Est. Total Avail. for Work, 78-82	Net Supply/ Demand
Ag. Prod.	680	1774	3400	7880	+4480 *
Ornam. Hort.	620	448	3100	3412	+312
Ag. Supp. & Serv.	150	27	750	218	-532 **
Ag. Mechanics	60	358	300	1970	+1670
Ag. Resources	50	15	250	78	-172
Forestry	-	13	-	165	-
TOTALS for all areas, except Forestry	1560	2622	7800	13,588	+5788

21

*Note: adult enrollment is in supplemental training

**Note: this program has been identified as priority for expansion in 1980 Plan

-adapted from Kentucky Five Year Plan and Accountability Report

The overall total on this chart can be misleading, however, and it must be explained why projected enrollment so greatly outweighs projected manpower need. This is partly due to the large number of adults taking supplemental training, which accounts for the higher enrollment figures. Furthermore, these statistics do not reflect dual employment, i.e. the farmer who also works at another job.

What these statistics do seem to indicate is the areas that will need additional education emphasis in coming years, specifically Agricultural Supplies and Services and Agricultural Resources.

The Agribusiness Education Unit of the Bureau of Vocational Education has addressed this issue in the Kentucky Annual Program Plan for 1980:

> Instructional programs to prepare individuals for production agriculture (farming) have been and continue to be a major thrust. However, with increased demands for better trained operators and managers of farming operations, there is also a demand to prepare individuals in agriculture-related occupations (off-farm agriculture occupations). It requires four people working in agribusiness to supply the needs of a full-time farmer.

The following are the only Agribusiness-related occupations in which there will be over 20 annual job openings:

	Total Annual Demand for Workers
Farmers (Owners & Tenants)	920
Farm Managers	60
Mixing Operatives (Supp. & Serv.)	40
Animal Caretakers (exc. farm)	110
Farm Implement Mechanics & Repairers	60
Gardeners & Groundskeepers (exc. farm)	330
Foresters & Conservationist	50

B. General Results

As the following outline, "A Matrix Approach to Assessing Curriculum Needs," states, one basic tenant of this procedure is that it is applicable, with some alterations, to any program area. The strength of the procedure is that it is based on validated occupational data. Its limitation is that the matrix can not determine curriculum priorities; educators must do that. What the matrix can do is serve as a tool for the curriculum planner.

While the basic procedure is not complicated, obtaining the necessary information can be difficult. Hopefully, this project will aid other curriculum planners, by indicating where the necessary information may be located and how it fits into the overall plan.

Although the mailed survey form was the only verification procedure used in this project, others are possible. The disadvantages of each procedure will have to be weighed against their merits and available time, money, and personnel resources.

A Matrix Approach to Assessing Curriculum Needs

Basic Concepts

This process stands on certain basic assumptions.

1. The matrix is based on occupations, not on educational program structures.
2. Information in the matrix has been validated by workers in the occupation.
3. Educational program areas may differ, but the process is adaptable to any area, with minor alterations.
4. The matrix does not set priorities for curriculum development. It is merely a map of the occupational cluster; the educator must decide where to go, although the matrix can indicate certain areas of need or can suggest a necessity to restructure vocational programs.

Basic Procedure

1. Obtain a tentative working document which outlines the occupational cluster.
2. Revise the outline to be in proper matrix form.
3. Identify populations in each sub-cluster for verifying matrix.
4. Decide upon one of several procedures for obtaining verification.
5. Obtain information from respondents and compile.
6. Revise matrix as results indicate.

7. Obtain current and projected enrollment and manpower data.

8. Determine areas in which task-based curriculum development is complete.

9. Assess current and projected needs.

10. Set priorities for new curriculum development.

Items Needed

Listed below are the items needed to perform the basic procedures, as well as suggestions for obtaining them.

1. Working document showing occupational cluster - a search of current literature is necessary; some work has been done on this by other states.

*2. General matrix - the basic matrix, originally developed in Indiana, shows the relationship between occupational data and educational programs.

3. Worker respondents - obtain from business and industry, professional associations, personal contact, etc.

*4. Procedures for verification - alternative procedures for obtaining verification of matrix from workers are contained herein.

5. Data analysis - may require computer program, research assistance.

6. Enrollments - obtain from Occupational Information Unit or Program Management Division.

7. Manpower data - obtain from various sources, such as Department of Labor, Occupational Information Unit, etc.

8. Needs assessment - input from all parties concerned.

Alternative Procedures

Listed below are possible alternatives for obtaining verification of the matrix, as well as some disadvantages in each approach.

Alternative Procedures for obtaining verification of Matrix:

1. The mailed survey form
   a. requires significant development time to identify items for duties listing
   b. requires significant amount of time for compilation and analysis
   c. difficult to identify large number of respondents
   d. return on surveys is relatively low.
   e. cost is greater (postage, printing)

2. The hand-carried survey

   a. development time still required

   b. significant time required on the part of the respondents and interviewers

   c. smaller overall population

3. Interview questions

   a. information less complete and inconsistent

   b. significant time required on part of respondents and interviewers

   c. smaller overall population

4. Advisory Committee

   a. information less valid

   b. relies heavily on expertise (and biases) of Committee members

Summary

Although the verification process is not as thorough as that done for a task analysis, it can, if representative, provide a verified base for determining job titles in an occupational cluster. By arranging these on a matrix, one can view the occupation in outline form and tailor educational programs to reflect the true organization of the occupation. The result will be a systematic approach to setting curriculum development priorities.

* Contained in this report

EXAMPLE I - OCCUPATIONAL CLUSTER - GENERAL MATRIX

PLAN FOR PROGRAM ORGANIZATION			DERIVATION OF LEARNING CONTENT		
SUB-CLUSTER	CATEGORY	JOB TITLE	TASK	CATEGORY CORE	SUB-CLUSTER CORE
Major Groupings of Job Titles	Minor Groupings of Job Titles	List of all Job Titles	List of Tasks for Each Job	Tasks Common to Job Titles In Category	Tasks Common to Job Titles In Sub-Cluster
SIMILAR TO VOCATIONAL PROGRAMS	SIMILAR TO SPECIFIC CURRICULA	SMALLEST UNITS OF INSTRUCTION			

*Adapted from Dr. Bill R. West, Indiana State Board of Vocational and Technical Education

EXAMPLE 2 - AGRIBUSINESS CLUSTER - (PARTIAL)

SUB-CLUSTER	CATEGORY	JOB TITLES	TASKS	CATEGORY CORE	SUB-CLUSTER CORE
HORTICULTURAL PRODUCTION	Landscape and Nursery	Landscape Planter Landscape Designer Landscape/Nursery Salesperson Nursery Worker Nursery Mechanic Plant Propagator Nursery Owner	separate list	Tasks common to Landscape & Nursery Production	TASKS COMMON TO HORTICULTURAL PRODUCTION
	Vegetables	Vegetable Farmer Vegetable Farm Manager Wholesale Vegetable Farmer	separate list	Tasks common to Vegetable Production	
	Fruits	Berry Grower Tree Fruit Farmer Fruit Farm Mgr. Wholesale Fruit Farm Manager	separate list	Tasks common to Fruit Production	
	Turf	Golf Course Maintenance Worker Golf Course Maintenance Foreman Parks & Recreation Worker	separate list	Tasks common to Turf Production	
	Greenhouse	Greenhouse Mgr. Greenhouse Foreman Greenhouse Worker Greenhouse Salesperson	separate list	Tasks common to Greenhouse Production	
	Floriculture	Floral Shop Mgr. Wholesale Florist Floral Designer Floral Salesperson Floral Delivery Person	separate list	Tasks common to Floral Production	
PRODUCTION AGRICULTURE	Crop Production				
	Livestock Production				
MECHANICS AND CONSTRUCTION	Operation and Maintenance				
	Repair				
AGRICULTURAL RESOURCES	Recreation				
	Soil, Air, Water Conservation				
	Wildlife				
	Forestry				
SUPPLIES AND SERVICE	Agricultural Supplies				
	Service				
PRODUCTS AND PROCESSING	Food				
	Non-Food				

IV. Conclusions

The overall goal of establishing a system for assessing curriculum needs has been attained and documented in useable form. The results for the two Sub-clusters of Agribusiness have been compiled, both for their usefulness in Agribusiness Education planning and as examples to others of the final product. The other four Sub-clusters of Agribusiness have not been validated. Following an evaluation of data for the two largest areas (Horticulture and Production Agriculture), the Agribusiness Education Unit and Project Director will determine the best validation procedures to employ in validating the remaining areas.

V. Recommendations

The value of this systematic and worker verified approach to an occupational matrix is its usefulness in assessing curriculum needs and setting curriculum development priorities. With limited time and resources, wise curriculum planning is a must. Following the basic procedure and arriving at an occupational matrix, the curriculum educator has a valid road map of the occupation. With that, the educator can make informed decisions about the most effective route to follow in curriculum development.

Dissemination Activities

Objective 1

V-TECS Catalogs and instructional materials for Small Engine Repair, Graphic Arts and Nurse Aide were distributed to interested teachers across the state. A total of 33 instructors worked with these projects and contributed to their development. (See Appendix K) A summary of the procedures used in this project will be distributed to all interested supervisors and curriculum specialists in the Bureau of Vocational Education, as well as to teacher-educators and other interested persons. A news article summarizing the Graphic Arts portion of this project will appear in two state-wide vocational education journals. The three curriculum packages developed as a result of this project will be available to all vocational teachers in Kentucky who wish to implement them.

Objective 2

The Agribusiness matrix and survey results were distributed to all Committee members and the Agribusiness Education Unit of the Bureau of Vocational Education, for help in setting curriculum development priorities. A summary of the procedures entitled "A Matrix Approach to Assessing Curriculum Needs" will be distributed to all interested supervisors and curriculum specialists in the Bureau of Vocational Education, as well as teacher-eductors and other interested persons.

APPENDIX

Criteria for Evaluating Materials Developed by Other Sources

Review and evaluate purchased materials using the following criteria:

1. Does it lend itself to individualized instruction?
2. Does the content relate to the performance objectives?
3. Are there self-checks or similar activities that give feedback to the student?
4. How comprehensive are the materials? How many of the tasks do they cover?
5. Are there tests which will measure the student's ability to perform competencies? How closely do they relate to the criterion reference measures?
6. Are there instructor guides for using the materials?
7. Is the material appropriate for various educational levels?
8. What type of media accompanies the material?
9. Has the material been validated or field tested? If so, to what degree?
10. What is revision process?
11. Is it cost effective?

V-TECS/PICA COMPARISON FORM

(Partial)

Approve of Task			V-TECS Reference		Equivalent PICA Reference		PICA Reference Not Covered by V-TECS
1	2	3	Page #	Objective #	Page #	Objective #	
1			15	1	None	None	
1			16	2	None	None	
		3	17	3	II.2	4,7,8,9	
					I.2	3	
		3	18	4	II.2	8	
	2		19	5	II.2	10,11	
	2		20	6	VIII.2	7 PAS 22C	
						PAS 29C	
1			21	7	II.2	7 III.2#9	
		3	22	8	achieved by # 7		
					Not covered by a Sep. Objective		
			23	9	III.2	4,5	
			24	10	II.2	7	
			25	11	II.2	7-11	

1 - Not appropriate
2 - Nice to Know
3 - Essential

Agenda

Workshop for Teachers of Small Engine Repair

February 15 & 16

Thursday, February 15

7:00 - 7:15 p.m.——Introduction - Pat White, Director of Industrial Education Unit

7:15 - 8:30 p.m.——Orientation to CBVE and Explanation of project - Laura Steimel, Coordinator, Competency Based Vocational Education Unit

8:30 - 8:45 p.m.——Travel forms

8:45 - 9:00 p.m.——Questions

Friday, February 16

9:00 - 11:30 a.m.——Explanation of V-TECS Occupational Inventory and V-TECS Objectives for Small Engine Repair

Presentation of AAVIM slides and modular materials from Michigan - Bruce Shaeffer, Curriculum Specialist and Project Director

11:30 - 1:00 p.m.— Lunch

1:00 - 2:30 p.m.—— How to combine V-TECS catalog and commercial materials with teacher-made materials

How to develop slide/tape presentations

2:30 - 3:30 p.m.—— Instructors review materials

3:30 - 4:00 p.m.—— Discuss use of materials and follow-up inservice workshop

An Industrial Education Proposal to
Study and Review the P.I.C.A. System
As Modules for Kentucky's Printing Programs

Project Goals:

1. To provide Instructional Support for Kentucky's Printing Programs.
2. To Evaluate the P.I.C.A. System as Modules for Kentucky's Printing Programs.
3. To Plan A Summer Technical and Inservice Workshop for Kentucky's Printing Instructors.

PHASE I WORKSHOP

February 22-23, Executive Inn, Louisville, Kentucky

Objectives:

1. To become familiar with Kentucky's competency based effort.
2. To become familiar with the P.I.C.A. system.
3. To compare the V-TECS' Catalog objectives with the learning activities outlined in the P.I.C.A. system.
4. To discuss the uses of P.I.C.A. at the Secondary Post-Secondary levels.
5. To discuss a plan for field-testing the P.I.C.A. materials in Kentucky's printing programs.
6. To establish responsibiltities for field test teachers.
7. To discuss a summer technical/inservice workshop.

NURSE AIDE MODULES

TEACHER REACTION FORM

Module Title and Number: _____

ELEMENTS	YES	NO	?	COMMENTS
1. The introduction:				1.
a. describes what the student will learn.				a.
b. tells the student why the competency is needed.				b.
2. The directions are correct and explicit.				2.
3. The objectives are correctly stated.				3.
4. The job steps:				4.
a. are consistent with the objectives.				a.
b. provide sufficient opportunity for the student to learn.				b.
c. are practicable and feasible.				c.
d. are appropriate to the student level.				d.
e. are clearly and succinctly stated.				e.
f. include a variety of learning modes.				f.
g. are limited to the necessary knowledge and skills.				g.
h. are largely self-instructional.				h.
i. provide student reinforcement.				i.
j. provide practice of skills.				j.
5. Student self-checks:				5.
a. are directly related to the objective.				a.
b. cover the required knowledge.				b.
c. provide the student with feedback.				c.

ELEMENTS	YES	NO	?	COMMENTS
6. The job steps:				6.
a. are written at the student's level.				a.
b. provided the essential information.				b.
c. include appropriate instructional illustrations.				c.
d. are adequate in scope and depth.				d.
7. The instructor's final checklist:				7.
a. measures student achievement of the module objectives.				a.
b. is limited to the competencies stated in the objectives.				b.
c. states the desired performance in unambigous terms.				c.
d. is based on observable student performance or on the product of performance.				d.
8. Recommendations for additional learning activities in the module:				
a. individual				
b. group				
c. audio-visual				
d. final testing situation				
9. Comments for instructor's manual:				
a. average time needed for students to complete module.				
b. difficulties student might encounter.				
c. specific equipment needed.				
d. affective or cognitive information to be emphasized with this module.				
e. other				

Module No.	Module Title	V-TECS Obj. No.	Task
1	Cleaning, maintaining and storing shop tools	---	Clean, maintain, and store shop tools
2	Cleaning a small engine repair shop	27	Clean shop
3	Maintaining fire protection equipment	--	Maintain fire protection equipment
4	Cleaning engines and equipment	--	Clean engines and equipment
5	Starting and operating small engines	--	Start and operate small engines
6	Cleaning crankcase breathers	41	Clean crankcase brether
7	Maintaining lubrication systems	--	Maintain lubrication systems
8	Maintaining cooling systems	--	Maintain cooling systems
9	Cleaning and assembling fuel pumps	39	Disassemble, clean and reassemble fuel pumps
10	Cleaning and assembling carburetors	34, 35	Disassemble, clean and assemble pulsatio type and vaccum type carburetors
11	Removing and replacing carburetor diaphragm	38	Remove and reinstall caburetor diaphragm
12	Removing and replacing fuel system components	29, 30	Remove and clean fuel tank and fuel line remove, clean and reinstall fule filter systems
13	Cleaning and assembling float-type carburetors	36, 37	Disassemble, clean and reassemble float-type carburetors; adjust carburetors float valve
14	Servicing air cleaners	31, 32 33	Service oil bath, foam type and dry element air cleaners
15	Fine tuning carburetors	40	Fine tune carburetors
16	Adjusting and repairing mechanical governors	--	Adjust and repair mechanical governors
17	Testing a charging system	48	Troubleshoot the charging circuit using a manufacturer's guide
18	Replacing alternators and drive belts	49, 50	Inspect and replace belt pulley and belt; replace a alternator
19	Adjusting voltage regulator	42, 52	Adjust cutout relay; replace voltage regulator

Module No.	Module Title	V-TECS Obj. No.	Task
20	Testing and cleaning armature	43, 45	Check armature for short using an armatur growler; clean commutator
21	Testing and replacing field windings	44	Check and replace filed windings, if necessary
22	Replacing brushes and bearings	46, 47	Check and replace generator or starter brushes; replace alternator/ generator bearings or brushes
23	Testing and replacing diodes and rectifiers	51, 53	Replace rectifiers; replace diode assembly
24	Servicing batteries	54	Charge a battery
25	Testing and maintaining starting circuit	55	Trouble-shoot starting circuit
26	Rebuilding starter motors	--	Rebuild starter motor
27	Repairing manual starters	56, 57 63	Check manual starter for proper operation replace a defective or worn starter spring; replace starter rope
28	Replacing starter clutches	58, 59 61	Replace starter clutch if needed; replace a friction brake; replace friction disc
29	Replacing starter drives	60, 62	Replace starter pawls is needed; replace a worn or defective cup
30	Maintaining and servicing spark plugs	64	Install spark plug
31	Removing and inspecting flywheel	65	Inspect and reinstall or replace flywheel
32	Removing points, condenser and point plunger	66, 67	Replace the point plunger; replace points and condenser
33	Testing and replacing coils	68, 69	Adjust armature air gap; test and replace coil
34	Timing the ignition system	71	Time the ignition system
35	Testing a diode rectifier	73	Test a diode rectifier
36	Testing a capacitor discharge ignition system	74	Trouble-shoot a capacitor discharge ignition system
37	Testing and replacing safety switches	75	Replace safety switch
38	Reconditioning cylinders	79, 89	Ridge ream top of cylinder; deglaze cylinder
39	Replacing pistons and rings	76, 77	Replace a worn or defective piston; install piston rings
40	Replacing a cylinder	78	Replace a cylinder on a 4-cycle engine

Module No.	Module Title	V-TECS Obj. No.	Task
41	Replacing crankshafts and seals	81, 83	Replace a crankshaft; replace oil seals
42	Replacing camshafts	82	Replace a camshaft
43	Replacing connecting rods	80	Replace connecting rods
44	Servicing valves	84, 85 86	Replace valves and valve seats; grind valves and valve seats; lap valves
45	Repairing demaged threads	87, 88	Replace damaged thread using helicoil and a top and die set
46	Installing a short block	90	Install a short block
47	Identifying and obtaining repair parts	25, 26	Identify interchangable parts; obtain parts from stockroom; identify parts using catalog

CLEANING A SMALL ENGINE REPAIR SHOP (draft)

Introduction

Part of the responsibility of the Small Engine Repair Mechanic will be to keep his/her work area clean and in proper order. A clean, neat work space is a much safer place to work, and allows the mechanic to perform more professional repair. On the job, your employer will demand a clean shop. In this module, you will learn how to clean a Small Engine shop.

Directions

Read the objective(s) below. If you think you are already able to perform this task, read the Check-Out Activities and arrange with your instructor about doing them. If you need to complete learning activities in order to be able to do this task, read the Learning Activities and go through them in the order in which they are listed.

Objective(s)

Given the necessary tools and supplies, clean a Small Engine Repair shop. The floor must be swept, and the machinery and tools will be free of debris, oil, grease or dust. The entire shop must be free of excessive dust, debris, oil or grease. Machinery and tools must be in place and free of excessive dust, debris, oil and grease.

Learning Activities

1. READ Instruction Sheet I, Steps for Maintaining a Safe and Orderly Shop.
2. VIEW slide-tape presentation SER-2 on Principles of Good Workmanship.
3. CHECK YOUR KNOWLEDGE of a clean shop by completing Assignment Sheet 2, Safety Inspection Checklist.
4. ARRANGE with your instructor to complete this module by going through the Check-Out Activities.

Check-Out Activities

Using a shop supplied by the instructor, clean a Small Engine Repair shop.

Instruction Sheet I

STEPS FOR MAINTAINING A SAFE AND ORDERLY SHOP

1. Arrange machinery and equipment to permit safe, efficient work practices and ease in cleaning.
2. Stack or store materials and supplies safely in proper places.
3. Store tools and accessories safely in cabinets, racks or other suitable devices.
4. Keep working areas and work benches clear and free of debris and other hazards.
5. Keep floors clean and free from obstructions and slippery substances.
6. Keep aisles, traffic areas and exits free of material and other debris.
7. Properly dispose of combustible materials or store them in approved containers.
8. Store oily rags in self-closing or spring-lid metal containers.
9. Know the proper procedures to follow in keeping the work area clean and orderly.
10. Have sufficient brooms, brushes or other housekeeping equipment readily available.

--from Comprehensive Small Engine Repair, MAVCC

SAFETY
UNIT 11

ASSIGNMENT SHEET #2--COMPLETE INDIVIDUAL STUDENT SHOP SAFETY INSPECTION CHECKLIST

Complete the safety inspection checklist by physically conducting an inspection of the shop area.

CHECKING PROCEDURE

Draw a circle around the appropriate letter, using the following letter scheme:

S -- Satisfactory (needs no attention)
A -- Acceptable (needs some attention)
U -- Unsatisfactory (needs immediate attention)

Recommendations should be made in all cases where a "U" is circled. Space is provided at the end of the form for such comments.

A. GENERAL PHYSICAL CONDITION

1.	Machines, benches, and other equipment are arranged to conform to good safety practices	S A U
2.	Condition of stairways and ramps	S A U
3.	Condition of aisles	S A U
4.	Condition of floors	S A U
5.	Condition of walls, windows, and ceiling	S A U
6.	Illumination is safe, sufficient, and well placed	S A U
7.	Ventilation is adequate and proper for conditions	S A U
8.	Temperature control	S A U
9.	Fire extinguishers are of proper type, adequately supplied, properly located, and maintained	S A U
10.	Teacher and students know location of and how to use proper type for various fires	S A U
11.	Number and location of exits is adequate and properly identified	S A U

ASSIGNMENT SHEET #2

12.	Walls are clear of objects that might fall	S	A	U
13.	Utility lines are properly identified	S	A	U
14.	Air in shop is free from excessive dust and smoke	S	A	U
15.	Evaluation for the total rating of GENERAL PHYSICAL CONDITION	S	A	U

B. Housekeeping

1.	General appearance of orderliness	S	A	U
2.	Adequate and proper storage space for tools and materials	S	A	U
3.	Benches are kept orderly	S	A	U
4.	Corners are clean and clear	S	A	U
5.	Special tool racks, in orderly condition, and provided at benches and machines	S	A	U
6.	Tool, supply, and/or material room is orderly	S	A	U
7.	Sufficient scrap boxes provided	S	A	U
8.	Scrap stock is put in scrap boxes promptly	S	A	U
9.	Materials are stored in an orderly and safe condition	S	A	U
10.	A spring lid metal container is provided for waste and oily rags	S	A	U
11.	Dangerous materials are stored in metal cabinets	S	A	U
12.	Machines have been color conditioned	S	A	U
13.	Safety cans are provided for flammable liquids	S	A	U
14.	Floors are free of oil, water, and foreign material	S	A	U
15.	Evaluation for the total rating for HOUSEKEEPING	S	A	U

Instructor's Final Checklist

CLEANING A SMALL ENGINE REPAIR SHOP

The student should be evaluated according to the performance ratings in the box. Indicate on a separate sheet of paper whether the student's performance for each item is Fully Accomplished, Partially Accomplished, Not Accomplished or under certain circumstances, Not Applicable.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished, or Partially Accomplished, the student and instructor will discuss this and decide which learning activities must be repeated.

Student Performance			
Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished

In cleaning a Small Engine Repair Shop, the student:

1.	Cleaned and returned tools and equipment to proper location	( )	( )	( )	( )
2.	Cleaned work benches	( )	( )	( )	( )
3.	Dusted machinery.	( )	( )	( )	( )
4.	Stored supplies	( )	( )	( )	( )
5.	Applied sweeping compound to floor	( )	( )	( )	( )
6.	Swept floors.	( )	( )	( )	( )

P.N. MODULES IDENTIFIED FOR NUTSE AIDE PROGRAM

Module Number	Module Title
PN-0	Using Body Mechanics
PN-2	Washing Hands
PN-3	Adjusting Bed
PN-4	Making Beds
PN-5	Turning and Positioning Bed Patient
PN-6	Assisting with Motion Exercises
PN-7	Assisting Patient Out of Bed
PN-8	Assisting Patient to Wheelchair
PN-9	Assisting Patient Walking Supports
PN-10	Transporting Patients
PN-11	Maintaining Body Integrity
PN-12	Using Positioning Aids for Patients
PN-13	Dressing Patient
PN-14	Giving Back Rubs
PN-15	Caring for Patient's Hair
PN-16	Shaving Males
PN-17	Caring for Patient's Nails
PN-18	Bathing Patient
PN-19 A	Giving Patient a Sitz Bath
PN-19 B	Administering a Tepid Bath
PN-20	Serving Food Tray
PN-21	Feeding Patient
PN-22	Maintaining Oral Hygiene
PN-23	Caring for a Patient's Dentures
PN-24	Assisting Patient with Communications

Module Number	Module Title
PN-25	Taking Blood Pressure
PN-26	Measuring Pulse and Respiration
PN-27	Taking Patient's Temperature
PN-28	Recording Vital Signs
PN-29	Measuring and Recording Fluid Intake and Output
PN-30	Assisting with Patient Elimination
PN-31 A	Collecting Urine Specimens for Urinalysis
PN-31 B	Collecting Urine Specimens for Special Tests
PN-32	Testing Urine Specimens
PN-34	Removing Recal Impaction
PN-35	Collecting Stool Specimens
PN-36	Caring for the Colostomy
PN-37	Preparing and Assisting with Exams
PN-38 A	Giving Pre-Operative Skin Care
PN-38 B	Preparing Patient for Surgery
PN-42	Caring for the Patient Receiving IV Theraphy
PN-44	Setting Up Mist Tent or Vaporizer
PN-49	Collecting Nose or Throat Specimens
PN-51	Put on and Remove Mask and Gown
PN-54	Preparing Glassware for Sterilization
PN-55	Preparing Instruments for Sterilization
PN-56	Opening and Handling Sterile Items
PN-57	Pouring Sterile Solutions
PN-61	Administering Local Applications
PN-62	Operating Turning Frames
PN-63	Apply a Crib Net
PN-64	Applying Restraints to the Appendages

Module Number	Module Title
PN-65	Applying Restraints for Support and Safety
PN-66	Apply Whole Body Restraints for the Pediatric Patient
PN-70	Applying a Roller Bandage
PN-71	Applying Tubular Bandage
PN-74	Applying and Removing Braces
PN-77	Caring for Perineum
PN-78	Setting Up Isolation Unit
PN-79	Serve and Remove Food Tray to Patient in Isolation
PN-80	Collecting Specimens Under Isolation Conditions
PN-81	Disinfecting Isolation Unit
PN-89	Irrigating Vaginal Canal
PN-96	Instructing and Assisting Breathing Exercises
PN-104	Assisting with Post-Morten Care
PN-106	Carrying Infant
PN-107	Bathing Infant
PN-108	Dressing Infant
PN-109	Feeding Infant
PN-110	Weighing and Measuring
PN-111	Identifying Infant
PN-112	Caring for Umbilical Cord
PN-115	Collecting Urine Specimen from Infant
PN-117	Admitting Patients
PN-118	Securing Patient's Valuables
PN-120	Transferring and Discharging Patients

AGENDA

Working Committee Meeting

Agriculture Project (#X99810)

November 21, 1978

I. Introduction

II. Explanation of Project Scope and Purpose

III. Explanation of Time Table and Procedure

IV. Explanation and Evaluation of Tentative Matrix

V. Explanation and Evaluation of Tentative Survey Form

VI. Suggestions for Survey Respondents and Survey Procedure

VII. Explanation of Travel Reimbursement Procedure

SURVEY TO DETERMINE JOB TITLES AND DUTY AREAS
IN HORTICULTURE

This is a job inventory. We need to know three things: 1) your job title (what you or your employer calls your position); 2) duties you perform on the job; 3) the relative amount of time you spend performing your duties.

PART I: Look over the entire list of job titles in Horticulture and place a check beside the one that best describes your position. If none of the job titles fits you, please write your own job title in the space provided.

PART II: As you read each duty, place a check beside each one that you do in your present job. Leave blank those you do not do in your present job. Add any duties you perform which were not listed.

PART III: Go back and look at the duty areas you checked. Then write in on page 7 the percentage of time you spend on those duty areas. Your total should equal 100%. Remember to give percentages only for those duty areas you checked in Part II.

Please print your name, place of employment, and number of years you have worked at your present job.

1. NAME _____

2. PLACE OF EMPLOYMENT _____

3. NUMBER OF YEARS _____

PART I: Check the job title which best describes your present position. If none are appropriate, write in your job title under the category where it best fits. Please check only one.

Category	Job Title	Check the one that best describes you.	Office Use Only
ARBORICULTURE:	Groundman		
	Trainee		
	Climber		
	Manager/Supervisor		
	Foreman		
OTHER:	_____		
FLORICULTURE:	Floral Delivery Person		
	Floral Sales Person		
	Floral Designer		
	Floral Shop Manager		
OTHER:	_____		
GREENHOUSE:	Greenhouse Foreman		
	Greenhouse Worker		
OTHER:	_____		
LANDSCAPE:	Grounds Supervisor		
	Landscape Planter (Crew Foreman)		
	Grounds Worker		
	Landscape Aide		
	Retail Landscape and Garden Store Salesman		
OTHER:	_____		
NURSERY:	Nursery Worker		
	Plant Propagator		
	Nursery Mechanic		
	Nursery Salesperson		
OTHER:	_____		
TURF:	Golf Course Maintenance Worker		
	Maintenance Worker - Parks		
	Worker Foreman - Parks & Recreation		
	Golf Course Mechanic		
	Golf Course Pest Control Specialist		
	Golf Course Maintenance Foreman		
	Golf Course Irrigation Specialist		
OTHER:	_____		

PART I: Check the job title which best describes your present position. If none are appropriate, write in your job title under the category where 45 it best fits. Please check only one.

Category	Job Title	Check the one that best describes you.	Office Use Only
FRUITS:			
	Berry Grower	_____	_____
	Fruit Farm Manager	_____	_____
	Vine Grower	_____	_____
	Vineyard Manager	_____	_____
	Tree Fruit Farmer	_____	_____
OTHER:	_____	_____	_____
VEGETABLES:	Vegetable Farmer	_____	_____
	Vegetable Farm Manager	_____	_____
	Specialty Crop (please name) _____	_____	_____
OTHER:	_____	_____	_____

1. Check any tasks you perform now.
2. Add any tasks you do now which are not listed.

PART II	CHECK IF DONE IN PRESENT JOB	OFFICE USE ONLY
1. Managerial Duties (such as interview and select workers, supervise workers, etc.)		
2. Sales Duties (such as prepare advertising and merchandise displays, etc.)		
3. Customer Service Duties (such as greeting customers, recommending products, techniques or practices, etc.)		
4. Clerical Duties (keeping records, preparing bills, packaging and labeling orders, maintaining inventory, etc.)		
5. Safety Duties (practicing safe work habits, knowing equipment safety procedures, etc.)		
6. Vehicle and Equipment Operation and Maintenance (operating and maintaining vehicles (tractor, delivery truck, etc.) and equipment (lawn mower, trimmer, etc.)		
7. Vehicle and Equipment Service (installing, servicing, or repairing vehicles and equipment of the trade)		
8. Building and Facilities Maintenance (maintaining company buildings and facilities)		
9. Construction Duties (reading blueprints; building greenhouses and other structures; installing and maintaining plumbing and/or electrical systems)		
10. Disease Control Duties (prevent and control insects and diseases; mix and apply chemicals for insect control)		

1. Check any tasks you perform now.
2. Add any tasks you so now which are not listed.

PART II (continued)	CHECK IF DONE IN PRESENT JOB	OFFICE USE ONLY
NOW LIST ANY GENERAL TYPES OF DUTIES YOU PERFORM WHICH ARE NOT COVERED ON THE PRECEDING PAGE:		
11. Arboriculture Duties		
a. identify trees and shrubs		
b. fertilize trees and shrubs		
c. protect trees and shrubs		
d. transplant trees and shrubs		
e. fell and dispose of unwanted trees		
NOW LIST ANY ARBORICULTURE DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
12. Floriculture Duties		
a. identify plants		
b. administer basic plant care		
c. create basic floral designs		
d. package floral designs and plants		
e. estimate cost of an arrangement		
f. make plans for interior decoration (weddings, parties, etc.)		
g. set up floral arrangements for interior decoration		
NOW LIST ANY FLORICULTURE DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
13. Greenhouse Duties		
a. sell and market greenhouse plants		
b. store and warehouse greenhouse plants		
c. test soil and plant tissue		
d. fertilize plants in greenhouse		
e. prepare greenhouse growing medium		
f. establish greenhouse plants		
g. harvest greenhouse plants		

JOB INVENTORY

1. Check any tasks you perform now.
2. Add any tasks you so now which are not listed.

PART II (continued)	CHECK IF DONE IN PRESENT JOB	OFFICE USE ONLY
NOW LIST ANY GREENHOUSE DUTIES YOU PERFORM WHICH ARE NOT LISTED ON THE PRECEDING PAGE:		
14. Landscape Duties		
a. establish turf and lawns		
b. renovate turf and lawns		
c. maintain turf and lawns		
d. plant ornamental plantings		
e. maintain ornamental plantings		
f. analyze landscape area		
g. prepare landscape area		
h. plant trees, shrubs, flowers and ground-covers		
NOW LIST ANY LANDSCAPE DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
15. Nursery Duties		
a. prepare growing medium and seedbed		
b. propogate nursery stock		
c. culture plants in the nursery		
d. harvest nursery stock		
e. store nursery stock		
f. process and ship nursery stock		
g. control plant environment		
NOW LIST ANY NURSERY DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
16. Turf Duties		
a. maintain greens and tees		
b. maintain fairways, roughs and traps		
c. maintain trees, shrubs, and flowers		
d. prepare soil for seed bed		
e. establish seed bed		
f. plant grass, flowers, trees, and shrubs		
g. control or prevent insects and rodents		
h. maintain watering schedule for turf areas		

1. Check any tasks you perform now.
2. Add any tasks you so now which are not listed.

PART II (continued)	CHECK IF DONE IN PRESENT JOB	OFFICE USE ONLY
NOW LIST ANY TURF DUTIES YOU PERFORM WHICH ARE NOT LISTED ON THE PREVIOUS PAGE:		
17. Fruit Growing Duties		
a. operate nursery		
b. lay out planting plan		
c. plant crop		
d. prune growing trees/plants		
e. fertilize growing trees/plants		
f. irrigate trees/plants		
g. harvest crop		
h. store crop		
i. market crop		
j. operate "pick-your-own" outlet		
NOW LIST ANY FRUIT GROWING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
18. Vegetable Growing Duties		
a. plan for growing crops		
b. prepare soil for planting		
c. plant crop		
d. fertilize plants		
e. irrigate plants		
f. harvest crop		
g. store crop		
h. market crop		
NOW LIST ANY VEGETABLE GROWING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		

PART III

Directions

Now go back and look at the duty areas you checked. Then on the list below, indicate the percentage of time you spend in each of those duty areas. Your total should equal 100%.

SAMPLE:

Duty Area	Percent of time spent
1. Managerial duties	10%
2. Sales duties	10%
3. Customer Service duties	20%
4. Landscape duties	60%
	100% Total

Now do the same for your duties. (Reminder: Only give percentages for those duty areas you checked in Part I.)

DUTY AREA	PERCENTAGE OF TIME SPENT
1. Managerial duties	_____
2. Sales duties	_____
3. Customer Service duties	_____
4. Clerical duties	_____
5. Safety duties	_____
6. Vehicle and Equipment Operation and Maintenance	_____
7. Vehicle and Equipment Service	_____
8. Building and Facilities Maintenance	_____
9. Construction duties	_____
10. Disease Control Duties	_____
11. Arboriculture duties	_____
12. Floriculture duties	_____
13. Greenhouse duties	_____
14. Landscape duties	_____
15. Nursery duties	_____
16. Turf Duties	_____
17. Fruit growing duties	_____
18. Vegetable growing duties	_____
	100% TOTAL

AGENDA

AGRIBUSINESS ADVISORY COMMITTEE for RESEARCH PROJECT

March 6, 1979

Advisory Committee Members:*

William Grant, Jr., Kentucky Farm & Power Equipment Dealers' Association
Marsha Herndon, Kentucky Farm Bureau Federation
John Koon, Kentucky Farm Bureau Federation
Jack Scott, Department of Commerce
Jim Singer, Singer Gardens

Working Committee Members:

Steve Davis, Curriculum Development Center
John Dickens, University of Kentucky
James Maddox, Bureau of Vocational Education
Doug Southworth, Scott County High School
Jack Wise, Clark County High School

Project Director: Laura C. Steimel, Coordinator
Competency Based Vocational Education Unit

I. Introductions
II. Explanation of CBVE
III. Rationale for Project
IV. Summary of Work Accomplished
V. Discussion of Matrix
VI. Discussion of Survey Form and Procedure

*also Townley Bergmann, Division of Forestry
Kilby C. Lanier, Soil Conservation Service

SURVEY TO DETERMINE JOB TITLES AND DUTY AREAS IN PRODUCTION AGRICULTURE

This is a job inventory. We need to know three things: 1) your job title (what you or your employer calls your position); 2) duties you perform on the job; 3) the relative amount of time you spend performing your duties.

PART I: Look over the entire list of job titles in Production Agriculture and place a check beside the one that best describes your position. If none of the job titles fits you, please write own job title in the space provided.

PART II: As you read each duty, place a check beside each one that you do in your present job. Leave blank those you do not do in your present job. Add any duties you perform which were not listed.

PART III: Go back and look at the duty areas you checked. Then write in on page 8 the percentage of time you spend on those duty areas. Your total should equal 100%. Remember to give percentages only for those duty areas you checked in Part II.

Please print your name, place of employment, and number of years you have worked at your present job. (This section is optional.)

1. NAME_____

2. PLACE OF EMPLOYMENT_____

3. NUMBER OF YEARS_____

PART I: Check the job title which best describes your present position. If your time is equally divided among 2 or 3 job titles, check the 2 or 3 that fit best. If none are appropriate, write in your job title under the category where it best fits.

Category	Job Title	Check the one that best describes you.	Office Use Only
LIVESTOCK: Beef	Beef Cattle Foreman Beef Cattle Farm Hand Artificial Inseminator Veterinary Assistant Feed Lot Foreman Cattle Buyer Feed Lot Laborer		
OTHER:	_____		
LIVESTOCK: Dairy	Dairy Farm Manager Dairy Farmworker		
OTHER:	_____		
LIVESTOCK: Horse	Horse Farm Manager Horse Farmworker		
OTHER:	_____		
LIVESTOCK: Poultry	Chicken Farmer Turkey Farmer Poultry Farmworker Egg Producer Chicken Vaccinator		
OTHER:	_____		
LIVESTOCK: Sheep	Sheep Farmer Sheep Farm Hand Lamb Feeder Feed Lot Foreman Feed Lot Laborer Sheep Shearer		
OTHER:	_____		
LIVESTOCK: Swine	Swine Farmer Swine Farmworker		
OTHER:	_____		

PART I: Check the job title which best describes your present position. If your time is equally divided among 2 or 3 job titles, check the 2 or 3 that fit best. If none are appropriate, write in your job title under the category where it best fits.

Category	Job Title	Check the one that best describes you.	Office Use Only
CROP: Tobacco	Tobacco Producer Tobacco Farmworker	_____ _____	_____ _____
OTHER:	_____	_____	_____
CROP: Pasture	Pasture Producer Pasture Farmworker	_____ _____	_____ _____
OTHER:	_____	_____	_____
CROP: Corn	Corn Producer Corn Farmworker	_____ _____	_____ _____
OTHER:	_____	_____	_____
CROP: Soybean	Soybean Producer Soybean Farmworker	_____ _____	_____ _____
OTHER:	_____	_____	_____
CROP: Small Grain	Small Grain Producer Small Grain Farmworker	_____ _____	_____ _____
OTHER:	_____	_____	_____
CROP: Hay	Hay Producer Hay Farmworker	_____ _____	_____ _____
OTHER:	_____	_____	_____
CROP: Specialty (please name)	Specialty Crop Producer Specialty Crop Worker	_____ _____	_____ _____
OTHER:	_____	_____	_____
GENERAL	Farm Manager, General Farmworker, Field Crops Farmworker, Livestock Farmworker, Dairy	_____ _____ _____ _____	_____ _____ _____ _____
OTHER:	_____	_____	_____

JOB INVENTORY

1. Check any tasks you perform now. 55
2. Add any tasks you do now which are not listed.

PART II	CHECK IF DONE IN PRESENT JOB	OFFICE USE ONLY
1. Managerial Duties		
a. keeping records		
b. purchasing insurance		
c. hiring, training, and supervising workers		
d. managing finances and taxes		
e. purchasing or selling equipment and supplies		
f. marketing crops or livestock		
g. managing farm buildings		
NOW LIST ANY MANAGERIAL DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
2. Beef Producing Duties		
a. inspect cattle		
b. market cattle		
c. tend cattle		
d. feed cattle		
e. produce feed		
f. handle crops, feed, bedding		
g. inseminate cows		
h. identify and treat diseases		
i. manage feed lot		
j. purchase and sell cattle		
k. maintain facilities and equipment		
NOW LIST ANY BEEF PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
3. Dairy Producing Duties		
a. follow correct milking procedures		
b. maintain milking system in good condition		
c. keep mastitis losses to a minimum		
d. identify animals of health problems		
e. treat health problems of animals		
f. utilize basic principles of nutrition		
g. provide adequate nutrients for animals		
h. manage herd for profitable reproduction		
i. select breeding and productive animals		
j. provide adequate milk handling system		
NOW LIST ANY DAIRY PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		

1. Check any tasks you perform now.
2. Add any tasks you do now which are not listed.

PART II (continued)	CHECK IF DONE IN PRESENT JOB	OFFICE USE ONLY
4. Horse Producing Duties		
a. classify and select horses		
b. feed horses		
c. manage pastures		
d. control diseases and injuries		
e. install, maintain and repair facilities		
f. groom and provide hoof and leg care		
g. train and handle horses		
h. exhibit horses		
i. breed horses		
j. buy and sell horses		
NOW LIST ANY HORSE PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED		
5. Poultry - Egg Producing Duties		
a. maintain housing, equipment, and supplies and grounds		
b. prepare house for baby chicks/started pullets or poults		
c. maintain sanitation		
d. operate equipment and machinery		
e. control pests		
f. market product (poultry, eggs)		
g. care for eggs		
h. prepare for removal of hens/broclers		
NOW LIST ANY POULTRY - EGG PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
6. Sheep Producing Duties		
a. manage feed and feeding		
b. market animals		
c. operate, maintain and repair equipment		
d. develop health program		
e. judge and select animals		
f. perform breeding tasks		
g. control predators		
h. perform lambing tasks		
i. shear sheep (lambs/wool)		
j. herd sheep		
k. slaughter sheep		
l. produce feed		
NOW LIST ANY SHEEP PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		

1. Check any tasks you perform now.
2. Add any tasks you do now which are not listed.

PART II (continued)	CHECK IF DONE IN PRESENT JOB	OFFICE USE ONLY
7. Swine Producing Duties		
a. select animals for breeding		
b. care for pigs		
c. maintain sanitary environment		
d. market hogs		
e. provide for feeding and nutrition		
NOW LIST ANY SWINE PRODUCING DUTIES WHICH YOU PERFORM THAT ARE NOT LISTED ABOVE:		
8. Tobacco Producing Duties		
a. select land, seed, fertilizer, etc.		
b. produce tobacco plants		
c. grow tobacco		
d. control pests and diseases		
e. harvest tobacco		
f. store tobacco		
g. strip tobacco		
h. market tobacco		
NOW LIST ANY TOBACCO PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
9. Pasture Producing Duties		
a. select seeds		
b. till and plant		
c. manage and apply fertilizer		
d. control pests and disease		
NOW LIST ANY PASTURE PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		

1. Check any tasks you perform now.
2. Add any tasks you do now which are not listed.

PART II (continued)	CHECK IF DONE IN PRESENT JOB	OFFICE USE ONLY
10. Corn Producing Duties		
a. select seeds		
b. prepare seed bed		
c. know planting methods and practices		
d. manage and apply fertilizer		
e. control pests and diseases		
f. harvest corn		
g. store corn		
h. market corn		
NOW LIST ANY CORN PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
11. Soybean Producing Duties		
a. select seeds		
b. prepare seedbed		
c. know planting methods and practices		
d. manage and apply fertilizer		
e. control pests and disease		
f. harvest soybeans		
g. store soybeans		
h. market soybeans		
NOW LIST ANY SOYBEAN PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
12. Small Grain Producing Duties		
a. select seeds		
b. prepare seedbed		
c. plant crop		
d. manage and apply fertilizer		
e. control pests and disease		
f. harvest grain		
g. store grain		
h. market grain		
NOW LIST ANY SMALL GRAIN PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		

1. Check any tasks you perform now.
2. Add any tasks you do now which are not listed.

PART II (continued)	CHECK IF DONE IN PRESENT JOB	OFFICE USE ONLY
13. Hay Producing Duties		
a. select seeds		
b. till and plant		
c. manage and apply fertilizer		
d. control pests and disease		
e. harvest hay		
f. store hay		
g. market hay		
NOW LIST ANY HAY PRODUCING DUTIES YOU PERFORM WHICH ARE NOT LISTED ABOVE:		
14. Specialty Crop Duties (Please list)		

PART III

Directions

Now go back and look at the duty areas you checked. Then on the list below, indicate the percentage of time you spend in each of those duty areas. Your total should equal 100%.

SAMPLE:

Duty Area	Percent of time spent
1. Managerial duties	35%
2. Beef producing duties	50%
3. Hay producing duties	15%
	100% Total

Now do the same for your duties. (Reminder: Only give percentages for those duty areas you checked in Part I.)

DUTY AREA	PERCENTAGE OF TIME SPENT
1. Managerial duties	_____
2. Beef producing duties	_____
3. Dairy producing duties	_____
4. Horse producing duties	_____
5. Poultry - Egg producing duties	_____
6. Sheep producing duties	_____
7. Swine producing duties	_____
8. Tobacco producing duties	_____
9. Pasture producing duties	_____
10. Corn producing duties	_____
11. Soybean producing duties	_____
12. Small grain producing duties	_____
13. Hay producing duties	_____
14. Specialty Crop producing duties	_____
	100% Total

Instructors Involved in V-Tecs Catalog Utilization

Nurse Aide

Sarah Crumbaugh
Caldwell Co. AVEC

Wilma Anderson
Madisonville SVTS

Vicki Weller
PeeWee Valley Voc. Ed. Center
Ky. State Reformatory for Women

Louvena Titus
Owensboro Vo-Tech School

Leatrice Jenkins
Jefferson SVTS and Manpower Skill Center

Mary Lynn Bobzien
Kentucky Children's Home

Emogene Strickler
Bowling Green SVTS

Small Engine Repair

William Vickers
Daviess Co. SVTS

William Kiebler
Paducah AVEC

Edgar Hargrove
Scott Detrick Voc. Ed. Center

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Eddyville State Penitentiary

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Instructors Involved in V-Tecs Catalog Utilization

Graphic Arts-Continued

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